Name:

at1113exam: Expand, factor, and solve quadratics (v204)

1. Solve the equation.

$$(2x + 5)(7x - 9) \;=\; 0$$

$x = \dfrac{-5}{2}$ $\qquad$ $x = \dfrac{9}{7}$

2. Expand the following expression into standard form.

$$(5x + 4)^2$$

$25x^2 + 20x + 20x + 16$

$25x^2 + 40x + 16$

3. Expand the following expression into standard form.

$$(7x - 5)(7x + 5)$$

$49x^2 + 35x - 35x - 25$

$49x^2 - 25$

4. Expand the following expression into standard form.

$$(8x + 9)(3x - 4)$$

$24x^2 - 32x + 27x - 36$

$24x^2 - 5x - 36$

5. Factor the expression.

$$x^2 + 8x + 15$$

$$(x+3)(x+5)$$

6. Solve the equation with factoring by grouping.

$$18x^2 + 12x + 15x + 10 \;=\; 0$$

$$(6x+5)(3x+2) = 0$$

$$x = \frac{-5}{6} \qquad x = \frac{-2}{3}$$

7. Factor the expression.

$$9x^2 - 49$$

$$(3x-7)(3x+7)$$

8. Solve the equation.

$$10x^2 - 67x + 70 \;=\; 3x^2 + 4x - 2$$

$$7x^2 - 71x + 72 = 0$$

$$(7x-8)(x-9) = 0$$

$$x = \frac{8}{7} \qquad x = 9$$